



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,718	04/02/2004	Georg Wittmann	12406-062001	1015
26181	7590	12/28/2005	EXAMINER	
FISH & RICHARDSON P.C. PO BOX 1022 MINNEAPOLIS, MN 55440-1022			LE, THAO X	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/816,718

Applicant(s)

WITTMANN ET AL.

Examiner

Thao X. Le

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 17-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims 1-9 drawn to an invention nonelected with traverse in the amendment dated 08 Jul. 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Objections***

2. Claims 20 and 24 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Recited 'the group consisting of polymeric matrix with dispersed cyclodextrines and a polymeric matrix with anhydrides' in claim 17 would exclude a cyclic olefin copolymer. Thus, the limitations 'a cyclic olefin copolymer' in claim 20 would be improper and would have broaden the scope of the claimed invention.

For the purpose of examination, 'a cyclic olefin copolymer' in claims 20 and 24 is not being considered.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 17-20, 21-26, and 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6624568 to Silvernail in view of US 2003/0113525 to Beaverson et al. or US 5312689 to Dasher et al.

Regarding claims 17 and 30 Silvernail discloses an organic electronic device that has one or more components in fig. 1 that are sensitive to moisture or oxidizing agents, comprising: a flexible substrate 110, column 4 line 56; a functional area 140, fig. 1, on the substrate 110 comprising one or more active organic elements 140, column 4 line 6; a cap 120/150, column 4 line 2, encapsulating the organic functional area 140; and a first flexible multilayer packaging material 120, column 4 line 1, having a first active

Art Unit: 2814

polymeric barrier layer 121a (planarizing material), column 4 line 47, that binds moisture and oxidizing agents, column 4 lines 34-37, and a ceramic barrier layer 122a (high density material), column 4 line 47; wherein the first flexible multilayer packaging material 120 protects the functional area 140.

But Silvernail does not disclose the organic electric device wherein the first active polymer barrier 121a includes one or more material from the group consisting of a polymer matrix with dispersed cyclodextrines and a polymeric matrix with anhydrides, wherein the anhydrides are acid anhydrides of organic acids.

However, Beaverson discloses an active polymer barrier [0002] includes one or more material from the group consisting of a polymer matrix with dispersed cyclodextrines [0009]-[0011]. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use polymer matrix with dispersed cyclodextrines teaching of Beaverson with Silvernail's device, because it would have improved the barrier properties of the polymer matrix as taught by Beaverson, see abstract.

With respect to polymer matrix anhydride, Dasher discloses an active polymer barrier 22, col. 5 line 16, includes one or more material from the group consisting of a polymer matrix with anhydride, wherein the anhydrides are acid anhydrides of organic acids, col. 3 lines 30-35. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use polymer matrix with anhydride teaching of Dasher with Silvernail's device, because it would have

improved the moisture barrier and adhesion properties of the polymer matrix as taught by Dasher, col. 3 lines 24-28.

Regarding claim 18, Silvernail discloses the organic electronic device according to claim 17, wherein: the first flexible multilayer packaging material 120 is arranged between the functional area 140 and the flexible substrate 110, fig. 1.

Regarding claim 19, Silvernail discloses the organic electronic device according to claim 17, wherein the cap 120/150 comprises the first flexible multilayer packaging material 120.

Regarding claims 20, 24, Silvernail discloses the organic electronic device according to claim 17, wherein the cap comprises a second flexible multilayer packaging material 150 comprising: at least one ceramic barrier layer 152a (high density material), column 5 line 45; and at least one active polymeric barrier layer 151a (planarizing material), column 5 line 45 that binds the moisture and oxidizing agents, column 4 lines 34-37, comprising polymer, column 5 lines 1-3.

But Silvernail does not disclose the at least one active polymeric barrier layer of the second flexible multilayer packaging material includes one or more materials from the group consisting of a polymeric matrix with dispersed cyclodextrines and a polymeric matrix with anhydrides.

However, Beaverson discloses an active polymer barrier [0002] includes one or more material from the group consisting of a polymer matrix with dispersed cyclodextrines [0009]-[0011]. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use polymer matrix

with dispersed cyclodextrines teaching of Beaverson with Silvernail's device, because it would have improved the barrier properties of the polymer matrix as taught by Beaverson, see abstract.

With respect to polymer matrix anhydride, Dasher discloses an active polymer barrier 22, col. 5 line 16, includes one or more material from the group consisting of a polymer matrix with anhydride, col. 3 lines 30-35. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use polymer matrix with anhydride teaching of Dasher with Silvernail's device, because it would have improved the moisture barrier and adhesion properties of the polymer matrix as taught by Dasher, col. 3 lines 24-28.

Regarding claims 21, 22, Silvernail discloses the organic electronic device according to claim 17, wherein: the cap 120/150 includes one or more materials from the group consisting of polymers, metals and glass, column 5 line 1, wherein: the flexible substrate 110 comprises a polymer, column 4 line 56.

Regarding claim 23, Silvernail discloses the organic electronic device according to claim 22, wherein: the cap 120/150 comprises a second flexible multilayer packaging material comprising: at least one active polymeric barrier layer 151a that binds the moisture and oxidizing agents, column 4 lines 34-37; and at least one ceramic barrier layer 152a.

Regarding claim 25, Silvernail discloses the organic electronic device according to claim 22, wherein: the flexible substrate 110 includes a second active polymeric barrier layer 151a, fig. 1,.

Regarding claim 26, Silvernail discloses the organic electronic device according to claim 17, wherein: the flexible substrate 110 comprises an assembly of active polymeric barrier layers 121a and ceramic barrier layers 122a.

Regarding claim 27, Silvernail discloses the organic electronic device according to claim 26, wherein the substrate 110 has a first surface (top) and a second surface (bottom, the first surface (top) is closer to the functional area 140 than the second surface (bottom) comprises a ceramic barrier layer.

Regarding claim 28, Silvernail disclose the organic electronic device according to claim 17, wherein the one or more active organic elements 140 comprises at least one stack having a first electrically conductive layer (cathode), an organic functional layer (light-mission layer) on the first conductive layer (cathode) and a second electrically conductive layer (anode) on the organic functional layer; and the organic functional layer comprises at least one organic electroluminescent layer, column 4 line 6-26 and US 5707745 incorporated by reference.

Regarding claim 29, Silvernail discloses the organic electronic device according to claim 17, wherein the one or more active organic elements 140 includes at least one stack comprising a first electrically conductive layer (cathode), an organic functional layer (emission layer) on the first conductive layer (cathode) and a second electrically conductive layer (anode) on the organic functional layer 140; and the functional area 140 comprises at least one organic radiation detecting layer forming an organic radiation sensor (electron transporting layer, hole transporting layer), column 4 lines 6-26 and US 5707745 incorporated by reference.



Regarding claims 31-33, the combination of Silvernail with Beaverson and/or Dasher discloses all the limitations of claims 31-33 as discussed in the above claims 17-30 including binds and oxidizing agents via chemi- or physisorption.

The recitation of 'via chemi- or physisorption' is only a statement of the inherent properties of the product. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Or where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and MPEP 2112.01.

With respect to the first and second ceramic barrier layers exhibiting different microstructures, Silvernail discloses the first and second barriers, 122a-c can be selected from different materials including SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, Al<sub>2</sub>O<sub>3</sub>, col. 5 lines 14-17. Such different would have different microstructures.

6. Claims 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6624568 to Silvernail in view of US 2003/0113525 and Beaverson et al. or US 5312689 to Dasher et al as applied to claim 33 above and further in view of US 5587233 to König et al. or US 6333103 to Ishii et al.

Regarding claim 33, Silvernail does not disclose the device wherein the first and second ceramic barrier layers comprises  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>.

However, König discloses a ceramic layer consists of  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>, col. 2 line 47, and Ishii also discloses a ceramic layer comprises a mixture of  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub>, col. 8 line 24-27. At the time the invention was made; it would have been obvious to one of ordinary skill in the art to use the  $\alpha$ -Al<sub>2</sub>O<sub>3</sub> and  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> teaching of either König or Ishii to replace the ceramic layer of Silvernail, because it would have improved the wear resistance and durability as taught by Ishii in col. 1 lines 4-7 and König in col. 2 lines 32-34.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 17-29 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X. Le whose telephone number is (571) 272-1708. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M. Fahmy can be reached on (571) 272 -1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thao X. Le  
Patent Examiner  
22 Dec. 2005



LONG PHAM  
PRIMARY EXAMINER